

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte YUSAKU KATOH and TATSUYA NORITOH

Appeal 2007-1460
Application 10/481,336
Technology Center 3600

Decided: May 29, 2007

Before WILLIAM F. PATE III, HUBERT C. LORIN, and LINDA E. HORNER,
Administrative Patent Judges.

HORNER, *Administrative Patent Judge.*

DECISION ON APPEAL

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STATEMENT OF THE CASE

Appellants seek our review under 35 U.S.C. § 134 of the Examiner's final rejection of claims 1 and 2¹. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

SUMMARY OF DECISION

We AFFIRM-IN-PART.

THE INVENTION

Appellants' claimed invention is to a detachable crawler for an endless track travel device on a machine, such as a construction machine. Claim 1, reproduced below, is representative of the subject matter on appeal.

1. A detachable crawler comprising:
 - a rubber belt part (4), said rubber belt part comprising a rubber elastic body (4a), a tensile reinforcing layer (2) and core bars (3),
 - said tensile reinforcing layer (2) comprising a plurality of tensile reinforcing members arranged and embedded in the rubber elastic body (4a) in parallel rows, the rows extending in a crawler width direction, and the tensile reinforcing members extending in a crawler circumferential direction, and said core bars being embedded in the rubber elastic body at fixed intervals in the crawler circumference direction; and
 - detachable pads, each of said detachable pads being one of a) a rubber pad (5) comprising a rubber elastic body and a metal core (6) having protrusions (7) of a height HI on an inner peripheral side thereof and (b) an iron pad comprising a steel

¹ Claims 3 and 4 are object to as being dependent upon a rejected base claim, and claims 5 and 6 have been withdrawn from consideration.

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track shoe (21) having protrusions (7) of a height HI on an inner peripheral side thereof, each of said detachable pads being mountable to and dismountable from a tread side of the rubber belt part (4) by fastening fixtures;

wherein the rubber belt part (4) is provided with interfitted holes (12) of a height H2 on portions corresponding to the protrusions (7), the height HI of each of the protrusions (7) is less than the depth H2 of each of the interfitted holes (12), and the rubber elastic body (4a) is pressed by tightening fastening fixtures (8, 18).

THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

Fukushima (as translated) JP 04-133876 May 7, 1992

The following rejections are before us for review.

1. Claim 1 stands rejected under 35 U.S.C. § 102(b) as anticipated by Fukushima.
2. Claim 2 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Fukushima.

ISSUE

Appellants contend that Fukushima fails to anticipate claim 1 because (1) there is “no tightening force at all applied to the rubber belt” of Fukushima, and (2) the height of the protrusion of the steel pipe 42 is not less than the depth of the hole 24 (Appeal Br. 5, 7). Appellants further contend the specific tightening force of claim 2 would not have been obvious in view of Fukushima (Appeal Br. 11, 12). The Examiner contends that “the rubber elastic body will inevitably experience a

compressive force” from the tightening force applied to the tightening member 28, thereby satisfying the claimed limitation of “pressed by tightening fixtures” (Answer 5). The issues before us are whether Appellants have shown that the Examiner erred in finding that Fukushima discloses a detachable crawler as recited in claim 1 and teaches or suggests the detachable crawler recited in claim 2.

FINDINGS OF FACT

The relevant facts are:

1. Fukushima discloses a rubber crawler belt comprising a detachable lug unit and a rubber belt unit (Fukushima 4).
2. The rubber belt unit includes a metal core 21 having an engaging unit 22 for a driving wheel and a rolling rail surface 23 for a rolling wheel (Fukushima 5 and Figs. 3 and 6).
3. The metal core 21 is provided with a plurality of holes 24 having a predetermined depth (Fukushima 5).
4. The lug unit 40 includes a substrate 41, steel pipes 42, and rubber 45. The steel pipes are bonded to the substrate such that they correspond in location to the plurality of holes 24 of metal core 21 (Fukushima 5).
5. The rubber 31 of rubber belt unit 20 is located between the metal core 21 and the outer surface 47 of lug unit 40, when assembled. The depth of the holes 24 and the length of the projected portions of the steel pipes 42 are predetermined such that the surface 33 of the rubber belt unit and an outer surface 47 of the substrate 41 of the lug unit come in contact with

each other when the steel pipes 42 are brought into contact with the indentations 25 of holes 24 during tightening (Fukushima 6 and Figs. 6, 7).

6. The hole made in the belt unit has a depth $H1$ and the steel pipes 42 protrude a distance $H2$ from the surface of the lug unit as illustrated in the reproduction of Figure 7 below. The depth $H1$ of the hole is necessarily greater than the height $H2$ of the steel pipe protrusion because Fukushima discloses that the end of the steel pipe is brought into contact with the indentations 25 during tightening (Fukushima 6 and Fig. 7).

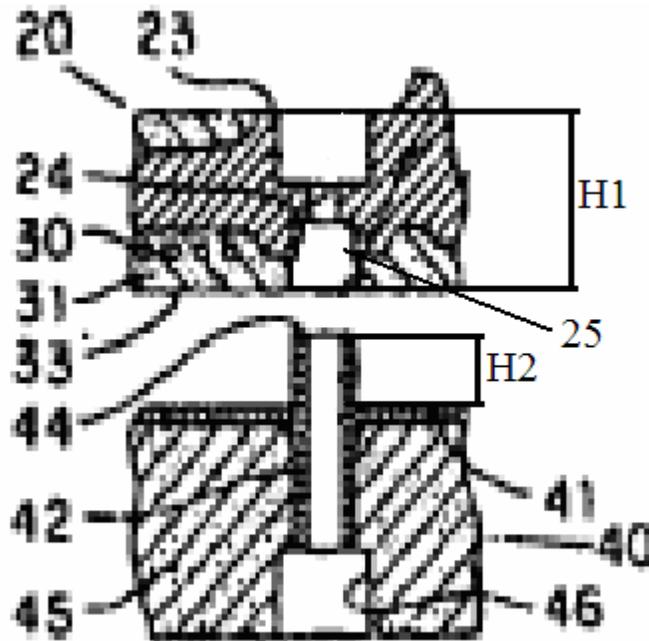


Figure 7 of Fukushima showing the interrelationship between the rubber belt unit and the lug unit

7. The lug unit 40 is attached to the rubber belt unit 20 by tightening the steel pipes 42 into the holes 24 using bolts 50, washers 52, and nuts 51 (Fukushima 6).

PRINCIPLES OF LAW

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 827 (1987).

“To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted) (internal quotation marks omitted).

The Examiner bears the initial burden of presenting a prima facie case of obviousness in rejecting claims under 35 U.S.C. § 103. *See In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993).

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966),

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viz., (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; and (3) the level of ordinary skill in the art. “[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability.” *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). Furthermore, “‘there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness’ [H]owever, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006)). Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See Oetiker*, 977 F.2d at 1445, 24 USPQ2d at 1444; *Piasecki*, 745 F.2d at 1472, 223 USPQ at 788.

ANALYSIS

Appellants argue that “no tightening force at *all* is applied to the rubber belt” (emphasis added) of Fukushima therefore the rubber elastic body is not pressed as required by claim 1 (Appeal Br. 5). We disagree

Fukushima discloses that the depth of the holes 24 in the rubber belt unit and the height of the projected portions of the steel pipes 42 are determined such that the surface 33 of the rubber belt unit and the outer surface 47 of the substrate 41 of the lug unit come in contact with each other during tightening (Finding of Fact 5).

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According to Fukushima, the lug unit is attached to the rubber belt by bringing the steel pipes 42 into contact with the indentions 25 of holes 24 during tightening (Finding of Fact 5). Furthermore, the rubber elastic body 31 of the rubber belt unit 20 is located between the metal core 21 and the outer surface 47 of the lug unit (Finding of Fact 5). As a result, when the lug unit is attached to the rubber belt by tightening bolts 50 (Finding of Fact 7), the rubber elastic body is necessarily “pressed” between the surface of the lug unit and the metal core.

Appellants further argue that Fukushima fails to disclose that the depth of the hole in the rubber belt is greater than the height of the corresponding protrusions in the lug unit (i.e., the height corresponding to H1 is not less than the depth corresponding to H2) (Br. 7). We disagree.

Fukushima discloses that the rubber belt unit has holes extending completely through the rubber belt unit that correspond to the location of the protrusions in the lug unit. In addition, Fukushima discloses that that the height of the protrusion of the steel pipe extends only to a depth of the indentions 25 (Finding of Fact 6). As a result, the depth of the hole in the rubber belt of Fukushima is necessarily larger than the height of its corresponding protrusions in the lug unit as the protrusions extend only to indentions 25. As such, we sustain the Examiner’s rejection of claim 1 under 35 U.S.C. § 102.

Claim 2, which depends from claim 1, further requires that a tightening force of 4.90 to 78.5 MPa per unit area is applied to the rubber elastic body. In rejecting claim 2, the Examiner held that it would have been obvious to one skilled in the art to use a “tightening force of 4.90 to 78.5 MPa per unit area that is applied to the

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elastic rubber body” in order to “prevent loosening in the belt while reducing noise” (Answer 4). Appellants contend that the tightening force of Fukushima is applied between the end of the steel pipe and the metal core of the rubber belt unit not to the rubber elastic body as claimed (Br. 5). We agree with the Appellants.

Although we agree, for the reasons discussed *supra*, with the Examiner’s holding that the rubber elastic body is necessarily pressed between the lug unit and the metal core of the rubber belt, the Examiner has not provided any evidence that application of a specific tightening force between the metal core and the steel pipes necessarily results in the same force being applied to the rubber elastic body. For the claimed tightening force to be inherent, the depth/thickness of the rubber elastic body would have to be greater than the height of the protrusion of the steel pipes. There is no evidence or suggestion in Fukushima of such a configuration. To the contrary, Fukushima discloses only that the surface of the rubber elastic body and the surface of the lug unit come in contact with each other. Therefore, it does not necessarily flow that the force exerted on the metal core and steel pipes would also be exerted on the rubber elastic body. As such, we do not sustain the Examiner’s rejection of claim 2 under 35 U.S.C. § 103(a).

CONCLUSIONS OF LAW

We conclude:

- 1) Appellants have not shown that the Examiner erred in rejecting claim 1 under 35 U.S.C. § 102(b) as anticipated by Fukushima.

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- 2) The Examiner erred in rejecting claim 2 under 35 U.S.C. § 103(a) as unpatentable over Fukushima.

DECISION

The Examiner's rejection of claim 1 as anticipated by Fukushima is sustained, and rejection of claim 2 as unpatentable over Fukushima is not sustained.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED-IN-PART

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